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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/517,417 | 03/02/2000 | Olivier Isson | S1022/8316 | 4387 |

7590 09/14/2005

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| EXAMINER |
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LEVITAN, DMITRY

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| ART UNIT | PAPER NUMBER |
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2662

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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|------------------------------|-----------------|--------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 09/517,417 | ISSON ET AL. | |
| | Examiner | Art Unit | |
| | Dmitry Levitan | 2662 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6, 9-17 and 20-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 9-17 and 20-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 March 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Applicant's amendment, filed 06/30/05, has been entered. Claims 1-6, 9-17, 20-27 remain pending.

Specification

1. The disclosure is objected to because of the following informalities:

Text on page 2, lines 23-30, is unclear, because sampling of the incoming signals as shown by dotted lines is not understood, as sampling of a signal as known is usually done in the middle of the symbol, therefore achieving the maximum amplitude of the symbol, however Fig. 4 shows dotted lines (sampling) as the borders between the incoming symbols.

Text on page 3, lines 1-5, is unclear, because it is not understood why the transitions between the outgoing symbols shown on Fig. 3 as f_2 are affecting the nearby channels.

Examiner believes that f_2 shown on Fig. 3 represents not the outgoing but the incoming symbol, and the outgoing symbol, shown as f_1 , will not affect the nearby symbols.

Text on page 6, lines 5-18, is unclear, because it is not understood why a disclosed subtraction will preserve the orthogonality. In addition it is not understood what kind of orthogonality is being preserved: in frequency domain as shown on Fig. 3 or time domain, where all the disclosed operations are performed.

Appropriate correction is required.

Drawings

2. The drawings are objected to because symbols "Sample" on Fig. 5 are not described in the specification. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement

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drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-6, 9-17, 20-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

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Claim 1 limitation “a processing circuit for making a local echo orthogonal” is not described in the specification to enable one skilled in the art to which it pertains, because the disclosure seems incomplete, omitting essential part showing that the achieved echo is orthogonal.

Claims 6 and 17 limitation “making the echoed first outgoing symbol and the echoed outgoing signal orthogonal to the first outgoing symbol and the second outgoing symbol” is not described in the specification to enable one skilled in the art to which it pertains, because the disclosure seems incomplete, omitting essential part showing that the signals are orthogonal.

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-6, 9-17, 20-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 limitation “a processing circuit for making a local echo orthogonal” is unclear, because it is not understood what the signal the local echo is orthogonal to and in what domain the orthogonality is achieved: time or frequency.

Claims 6 and 17 limitations “a first/second outgoing symbol” and echoed first/second outgoing symbol” are unclear, because “outgoing symbol” is used for both transmit and receive directions making the claim confusing.

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Claims 6 and 17 limitations “echoed first/second outgoing symbol” are unclear, because it is not understood if this signal is an echo of the first/second outgoing signal or an incoming signal with an echo from the first/second outgoing signal.

Claims 6 and 17 limitations “symbols are successfully received” and the following method are unclear, because it is not understood how the method could be performed if the symbols are successfully received. If the system successfully received the successfully transmitted symbols all the claimed acts seems irrelevant.

Claims 6 and 17 limitation “making the echoed first outgoing symbol and the echoed outgoing signal orthogonal to the first outgoing symbol and the second outgoing symbol” is unclear because orthogonality is understood as a relation between two signals, however orthogonality between two pairs of signals is not understood.

Claim Rejections - 35 USC § 103

In light of Applicant’s amendment, the rejection of claims 1-6, 9-17, 20-27 has been withdrawn.

Response to Arguments

7. Applicant's arguments with respect to claims 1-6, 9-17, 20-27 have been considered but are moot in view of the new ground(s) of rejection.

8. Examiner would like to thank the Attorney for the interview on 09/08/05 and his effort to explain the application to the examiner.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dmitry Levitan whose telephone number is (571) 272-3093. The examiner can normally be reached on 8:30 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Dmitry Levitan
Patent Examiner.
09/12/05